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Please find below and/or attached an Office communication concerning this application or proceeding.

A816

Office Action Summary	Application No.	Applicant(s)	
	09/600,831	DAVEY, TERENCE JAMES	
	Examiner	Art Unit	
	Gladys J Piazza Corcoran	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the corresp ndence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 June 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-7,19-21 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-7,19-21 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 19, 20, 21, 25 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 19 recites, "removing gas and vapor from the hull through the new surface of the hull." Claim 20 recites, "gaseous products in fibre/resin layers of the hull can be extracted in a vapor state from the hull through the portion of the surface of the hull." There is no disclosure or support for removing gas or vapor or gaseous products through the surface of the hull. The Specification only discloses removing gas or vapor from the surface of the hull. It is suggested to amend the claims to recite "from" the surface of the hull.

Claim **20** recites, "gaseous reaction products in fibre/resin layers of the hull can be extracted in a vapor state." While the Specification does disclose removing gaseous reaction products (page 5), however the Specification does not disclose that the gaseous reaction products are removed in a vapor state. The Specification only discloses on page 5, lines 10-15 that "gaseous reaction products are drawn off." It is

suggested to amend the claims to recite language as disclosed in the Specification, such as "gaseous reaction products in fibre/resin layers of the hull are extracted."

Claim 25 recites "a method of treating osmosis damage" and "where osmosis damage has occurred." While the Specification does disclose a method of treating damage that can result from a variety of sources (page 2), however the Specification also discloses that the "symptoms of such damage are often attributed to "osmosis" but there is some doubt as to whether any or all of this damage is actually caused by an osmotic reaction." It is suggested to amend the claim by deleting the term "osmosis" in lines 1 and 4 since Applicant's specification admits that there is doubt that this damage is actually caused by osmosis.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 25 recites "removing gel coat from a partial region of the exterior surface of the boat hull where osmosis damage has occurred; positioning a layer of gas permeable material in contact with the partial region of the exterior surface of the boat hull; positioning a layer of impermeable material adjacent the layer of gas permeable material in a manner such that the layer of gas permeable material is positioned in a space between the layer of impermeable material and the partial region of the exterior surface of the boat hull." It is unclear how the gas permeable material can be in contact

with the partial region of the exterior surface of the boat hull when the "exterior" surface of the boat hull at the partial region was removed in the step of removing the gel coat. The claim also recites "that the partial vacuum is in communication with all of said partial region of the exterior surface of the boat hull." It is unclear how the partial vacuum is in communication with the "exterior" surface of the boat hull when the gel coat has already been removed from the exterior surface. The claim also recites "applying a layer of gel coat to the partial region of the exterior surface of the boat hull." It is unclear how the layer of gel coat is applied to the "exterior" of the boat hull after the first gel coat layer is removed from the exterior surface. Since Applicant's specification only discloses positioning the layer of gas material in contact with the hull after the gel coat is removed and only discloses creating a partial vacuum after the gel coat is removed and only discloses applying a layer of gel coat after the first layer of gel coat is removed, it is suggested for applicant to amend the claim by reciting "from which the gel coat has been removed" in line 6 after the recitation of "of the boat hull" and in line 10 after the recitation of "of the boat hull", and in line 18 after the recitation of "of the boat hull", and in line 22 after the recitation of "of the boat hull".

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent

granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 5, 6, 20, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Browning et al. (US Patent No. 4,016,022).

As to the newly added limitations that the method is of a surface treatment of an existing product, the individual pre-formed plies of reinforced tape in Browning which are impregnated, formed, and cut to size are considered to be "existing products."

As to the newly added limitations that the gas permeable material is in contact with a partial region of the surface of the product, the gas permeable material (porous glass reinforced Teflon coated fabric or a breather cloth) in Browning is also in contact with a partial region of the surface of the product (i.e. the porous glass reinforced Teflon coated fabric and then a breather cloth are placed on the plies).

As to the newly added limitation of removing gaseous reaction products from the fibre/resin layers of the product by creating a partial vacuum within the space, Browning discloses curing the impregnated plies under a vacuum within the space, thus gaseous reaction products are removed with the vacuum.

As previously presented in the Prior Office Action, Browning discloses a method of treating the surface of a glass fibre product (column 2, lines 60-65) by positioning a layer of gas permeable material (porous glass reinforced Teflon coated fabric or a breather cloth) in contact with a partial region of a surface of the product, positioning a layer of impermeable material (nylon film vacuum bag) in a manner such that a space exists between at least a portion of the impermeable material and the surface with the

gas permeable material in the space (column 3, lines 15-30), applying heat within the space (column 3, lines 30-39), and removing gaseous reaction products from the fibre/resin layers of the product by creating a partial vacuum within the space in a manner that the vacuum is in communication with all of the portion of the surface of the product that is in contact with the layer of gas permeable material, with the partial vacuum having a pressure between 2 and 5 mb Abs (column 3, lines 30-43). As to claim 5, the step of partial vacuum occurs prior to the step of applying heat (column 3, lines 30-39). As to claim 6, the partial vacuum is maintained for at least an hour (column 3, lines 30-39).

As to claim 20, Browning discloses a kit capable of treating a glass fibre reinforced boat hull comprising a layer of gas permeable material (porous glass reinforced Teflon coated fabric or a breather cloth) capable of being positioned in contact with a portion of a the surface of the hull, a layer of impermeable material (nylon film vacuum bag) adapted to be positioned adjacent the layer of gas permeable material where the gas permeable material can be positioned in a space between the layer of impermeable material and the surface of the hull and such that the layer of impermeable material can not contact the surface when the layer of the impermeable material is positioned over the layer of gas permeable material and the layer of gas permeable material is in contact with the surface, means capable of securing the layer of impermeable material to the surface of the hull around a periphery of the layer of gas permeable material enclosing and sealing the space(column 3, lines 25-28), means for applying heating within the space (oven) (column 3, lines 15-43), and means for

reducing pressure within the space to a level between 2 and 5 mb Abs (column 3, lines 30-32) fully capable of extracting gaseous reaction products in fibre/resin layers of a hull through the surface and through the layer of gas permeable material. It is noted that the material worked upon in apparatus claims does not further limit apparatus claims (see MPEP 2115). As to claim 21, the gas permeable material, and the impermeable material are flexible to be compatible with different contours (column 3, lines 15-43).

8. Claims 20, 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Hale (US Patent No. 6,017,484).

Hale discloses a kit capable of treating a glass fibre reinforced boat hull comprising a layer of gas permeable material capable of being positioned in contact with a portion of the surface of a hull (release film 29, breather material 26), a gas impermeable material (vacuum bag 30) positioned adjacent the gas permeable material where the gas permeable material can be positioned in a space between the impermeable material and the portion of the surface of the hull and the gas permeable material configured and adapted such that the layer of impermeable material can not contact the portion of the surface of the hull, means capable of securing the impermeable material layer around the periphery to the surface of a hull to enclose and seal the space (column 5, lines 3-5; column 6, lines 34-35; column 7, lines 20-21), means for applying heating within the space (oven, heaters 18, 19) (column 4, line 53 to column 6, line 43), and means for reducing pressure within the space to a level between 2 and 5 mb Abs (column 8, lines 38-46) which is fully capable of extracting gaseous reaction products from layers of the hull through the surface of the hull and through the

gas permeable material (column 14, lines 13-16). It is noted that the material worked upon in an apparatus claim does not further limit apparatus claims (see MPEP 2115). As to claim 21, the gas permeable material, and the impermeable material are flexible to be compatible with different contours.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1, 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scola (US Patent No. 4,007,245) as taken with Hale (US Patent No. 6,017,484).

As to Applicant's newly amended limitation that the surface treatment is to an existing product, the treatment disclosed in Scola is for existing products (column 1, lines 15-41).

As to Applicant's newly amended limitation that the layer of gas permeable material is in contact with a partial region of a surface of the product, Hale discloses a layer of gas permeable material in contact with at least a partial region of a surface of the product.

Scola discloses it is known in the composite art to strengthen and repair fiber/resin composite materials, particularly of glass fiber (column 1, lines 15-26), after degradation caused by water and other polar compounds (column 2, lines 20-30) by treating the composite by a method of heating in a vacuum system in order to improve

the shear strength of the composite article (column 1-11; column 8, lines 29-34). Scola discloses an approximate example of the level of vacuum to be about 1 mm of Hg which is a greater amount of vacuum than the range as claimed. This is an approximate value for the level vacuum in order to achieve the maximum amount of strengthening in the composite part (column 8, lines 14-23). However, it is well within the purview of one of ordinary skill in the art to select appropriate vacuum levels, such as the claimed range, for providing the amount of strengthening desired and for the particular composite materials being worked upon. One of ordinary skill in the art would find the appropriate levels by routine experimentation according to the strengthening required and the minimum amount of costs for providing the particular levels of vacuum for the particular materials worked upon, only the expected results would be attained. In particular, known levels of vacuum in the art as exemplified by Hale.

Scola discloses that the method is practiced by applying heat and vacuum but does not specifically recite the particulars of the apparatus used to apply the heat and vacuum. It is known in the composite art, as exemplified by Hale, to apply heat and vacuum to composite parts by positioning a layer of gas permeable material (release film 29, breather material 26) in contact with a portion of the exterior surface of the part, positioning a layer of impermeable material (vacuum bag 30) with the gas permeable material in a space between the part and the impermeable material, applying heat to the space (oven, heaters 18, 19), and removing gas and vapor in the space with a vacuum in the range as claimed (column 4, line 53 to column 6, line 43). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the

method of treating a composite as shown by Scola by using a well known tool in order to apply the heat and vacuum as exemplified by Hale for repairs of composite parts.

As to claim 5, Scola does not appear to specifically recite whether the vacuum commences prior to heating, however it is well known in the art to apply the vacuum prior to applying heat to composite parts when treating with heat and vacuum, for example, Hale discloses such order of steps (column 4, line 53 to column 6, line 43). As to claim 6, the vacuum in Scola is maintained for at least an hour (column 2, lines 21-30. Furthermore, it would have been well within the purview to one of ordinary skill in the art to select the appropriate time for the application of the vacuum according to the particular material used and level of vacuum and heat applied.

As to claim 7, Scola discloses that the product is a composite molding of glass fiber and polyester resin (column 8, lines 35-45, 64-68) and the temperature and vacuum are maintained on the composite part for at least an hour (column 2, lines 21-30). Scola discloses an approximate exemplary temperature to heat the part for maximum strengthening as 300° F (column 8, lines 14-23). However, it is well within the purview of one of ordinary skill in the art to select appropriate Temperature levels, such as the claimed range, for providing the amount of strengthening desired and for the particular composite materials (fiber and resin) being worked upon. One of ordinary skill in the art would find the appropriate levels by routine experimentation according to the strengthening required, the minimum amount of costs for providing the particular levels of temperature for the particular materials worked upon, and the appropriate

temperatures for the particular properties of the particular materials, only the expected results would be attained.

11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scola in view of Hale as applied to claim 1 above, and further in view of Wuepper et al. (US Patent No. 5,023,987).

Hale discloses the impermeable layer's periphery is sealed to the product with a vacuum bag sealant (vacuum bag; column 5, lines 3-5). It is not clear if this is a tape however it is well known in the art to use an adhesive tape as a functionally equivalent to sealant in order to seal the periphery of vacuum bags. For example, Wuepper discloses a method of treating a surface where the layer of impermeable material (vacuum bag 130) is secured to the surface with a sealing tape around its periphery (column 5, lines 9-11). It would have been obvious to one of ordinary skill in the art at the time of the invention to perform the method as shown in Scola and Hale by securing the impermeable layer with an adhesive tape as exemplified by Wuepper since it is a well known functionally equivalent alternative to providing sealant in order to seal the layer.

12. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scola and Hale as applied to claim 1 above, and further in view of Wengler et al. (US Patent No. 4,352,707) and/or Mahon et al. (US Patent No. 3,837,965).

Hale discloses the impermeable layer's periphery is sealed to the product with a vacuum bag sealant (vacuum bag; column 5, lines 3-5). However it is well known in the art to provide such structures in such a way to be adapted to form an air tight seal by

the vacuum. For example, Wengler (column 3, lines 39-41) and/or Mahon (column 3, lines 1-3) both disclose examples of vacuum means where the impermeable material sheet forms an airtight seal via the partial vacuum that is applied. It would have been obvious to one of ordinary skill in the art at the time of the invention to perform the method of treating a surface as shown in Scola and Hale by securing the layer of impermeable material to the surface via the partial vacuum that is applied as is well known in the art as a equivalent alternative to sealant and further exemplified by Wengler and Mahon in order to seal the layer.

13. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Browning et al. as applied to claim 1 above, and further in view of Wuepper et al. (US Patent No. 5,023,987).

Browning discloses the impermeable layer's periphery is sealed to the product with a vacuum bag sealant (vacuum bag; column 3, lines 25-30). It is not clear if this is a tape however it is well known in the art to use an adhesive tape as a functionally equivalent to sealant in order to seal the periphery of vacuum bags. For example, Wuepper discloses a method of treating a surface where the layer of impermeable material (vacuum bag 130) is secured to the surface with a sealing tape around its periphery (column 5, lines 9-11). It would have been obvious to one of ordinary skill in the art at the time of the invention to perform the method as shown in Browning by securing the impermeable layer with an adhesive tape as exemplified by Wuepper since it is a well known functionally equivalent alternative to providing sealant in order to seal the layer.

14. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Browning et al. as applied to claim 1 above, and further in view of Wengler et al. (US Patent No. 4,352,707) and/or Mahon et al. (US Patent No. 3,837,965).

Browning discloses the impermeable layer's periphery is sealed to the product with a vacuum bag sealant (vacuum bag; column 3, lines 25-30). However it is well known in the art to provide such structures in such a way to be adapted to form an air tight seal by the vacuum. For example, Wengler (column 3, lines 39-41) and/or Mahon (column 3, lines 1-3) both disclose examples of vacuum means where the impermeable material sheet forms an airtight seal via the partial vacuum that is applied. It would have been obvious to one of ordinary skill in the art at the time of the invention to perform the method of treating a surface as shown in Browning by securing the layer of impermeable material to the surface via the partial vacuum that is applied as is well known in the art as a equivalent alternative to sealant and further exemplified by Wengler and Mahon in order to seal the layer.

15. Claims 19 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art in view of Scola (US Patent No. 4,007,245) as taken with Hale (US Patent No. 6,017,484) and further with McBroom (EP 0839635).

The Admitted Prior Art discloses it is known to treat or repair boat hulls that have water damage with an exterior surface formed of glass fiber and polyester resin composites by removing any damaged portion and affected gel coat areas from the exterior of the hull, allowing to thoroughly dry, and then replacing with a new gel coat by applying a layer of gel coat to the exterior surface of the hull from which the gel coat has

been removed (Specification page 1, line 1 to page 2, line 18). As to the newly added limitation that the removing of the gel coat exposes a new surface of the boat hull and that the application of the layer of gel coat is to the new surface of the hull, the Admitted Prior Art discloses such on page 2.

Scola discloses it is known in the composite art to strengthen and repair fiber/resin composite materials, particularly of glass fiber (column 1, lines 15-26), after degradation caused by water and other polar compounds (column 2, lines 20-30) by treating the composite by a method of heating in a vacuum system in order to improve the shear strength of the composite article (column 1-11; column 8, lines 29-34) by removing gas and vapor from the surface of the product (such would be removed under the conditions of heat and vacuum as shown by Scola.

Scola discloses that the method is practiced by applying heat and vacuum but does not specifically recite the particulars of the apparatus used to apply the heat and vacuum. It is known in the composite art, as exemplified by Hale, to apply heat and vacuum to composite parts by positioning a layer of gas permeable material (release film 29, breather material 26) in contact with a portion of the exterior surface of the part (which would be the exposed new surface of the part), positioning a layer of impermeable material (vacuum bag 30) adjacent the layer of gas permeable material with the gas permeable material in a space between the part and the impermeable material, securing the impermeable material to the surface of the part circumferentially around the gas permeable material (for repair of parts larger than the equipment the bag will be secured to the part; column 5, lines 3-5; column 14, lines 13-16), applying

heat to the space (oven, heaters 18, 19), removing gas and vapor in the space with a vacuum (column 5, lines 5-10), and removing the layers of gas permeable and impermeable material from the part (column 4, line 53 to column 6, line 43).

As to the limitation that the impermeable material is secured to the surface of the part circumferentially around the gas permeable material, as discussed above, for repair of parts larger than the equipment the bag in Hale will be secured to the part; column 5, lines 3-5; column 14, lines 13-16. Furthermore, it is well known in the art to provide a small vacuum apparatus (as suggested by Hale column 14, lines 13-16) for applying vacuum and heat to a small area of a larger composite product where the impermeable material is secured to the surface of the part circumferentially around the small area. For example, McBroom shows a typical, well known, small vacuum apparatus for applying heat and vacuum to a small repair area of a larger composite product where the impermeable material (vacuum bag) is secured to the surface of the part circumferentially around the gas permeable material (breather cloth 32) (see figure 5; column 8, lines 13-20). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of repairing a boat hull as disclosed by the Admitted Prior Art by applying heat and vacuum as an alternative to waiting for the area to dry in order to remove unwanted materials and strengthen the composite as shown by Scola by using a well known tool in order to apply the heat and vacuum as exemplified by Hale for repairs of composite parts, particularly boats where the impermeable material would be secured to the surface of the part circumferentially

around the gas permeable material as is well known in the art and further exemplified by McBroom.

As to newly added claim 25, the admitted prior art discloses attributing such damage to boat hulls to osmosis (page 2).

Response to Arguments

16. Applicant's arguments filed June 9, 2003 have been fully considered but they are not persuasive.

Applicant argues on page 11 that Browning is directed to the fabrication of new products and that the claim is directed to surface treatment of glass fibre products, boat hulls in particular. It is noted that the claims rejected by the reference Browning do not require the limitation of surface treatment of a boat hull. Furthermore, Browning as discussed above, does meet the limitation of surface treatment to an existing glass fibre product where the individually formed plies are each considered to be existing products.

Applicant further argues on page 11 that the primary aim of Browning is to apply pressure to composite layers to consolidate them as they cure, where the vacuum in the claimed method is supplied to remove gaseous reaction products and that removing gaseous reaction products during the process in Browning would be detrimental because prior to curing all of the resin is unreacted and the vaporization and removal thereof would destroy the formation process. This argument is unclear because the claim limitation is for removal of gaseous reaction products, therefore it is unclear how the remove of reaction products would destroy the formation process. In fact the materials in the Browning reference react during curing under the vacuum and any

gaseous reaction products, if present, are necessarily removed under the vacuum (column 3, lines 30-58).

Applicant argues on page 12 that Browning does not have a vacuum pressure of between 2 mb and 5 mb absolute. The Browning reference discloses that the air is evacuated down to about 28-30 inches of mercury. With a standard atmospheric pressure of 29.92 inches of mercury, 30 inches of mercury equates to about 2.7 mb absolute. Therefore the Browning reference does disclose the pressure range as claimed.

Applicant argues on page 12 that the Hale reference pertains to a manufacturing process and not a post-manufacture treatment process and that the repair pertains to the replacement of structure. It is noted that Applicant's arguments refer to claims 20 and 21 which are apparatus claims and not process claims. The claims do not require any post treatment process steps or even an apparatus for such steps. The reference Hale fully meets the limitations of an apparatus as claimed. It is further noted that the claims do not exclude the replacement of structure in a repair. Also, the material worked upon in apparatus claims does not further limit apparatus claims (see MPEP 2115).

Applicant further argues on page 12 that the claims require a means for securing the layer of impermeable material to the surface of the hull around the periphery of the layer of gas permeable material and that Hale discloses securing an impermeable layer to a tool but not to part of the surface of the hull around the periphery of the layer of gas permeable material. The apparatus in Hale has means that are fully capable of

securing the layer of impermeable material to the surface of a hull around the periphery of the layer of gas permeable material, namely the hermetic sealant 24 (similar to Applicant's adhesive tape or suitable mastic). Again, the material worked upon in apparatus claims does not further limit apparatus claims (see MPEP 2115). Furthermore, Hale does disclose the apparatus can be made into a smaller light weight version for on site repair of boats (column 14, lines 24-26). It is noted that Applicant has argued on page 12 that such repair pertains to the replacement of structure, for example repairing a hole by applying new composite material and resin to the surface and consolidating the material thereon. Therefore Applicant it appears that Applicant admits the apparatus is used on the surface of the boat and therefore must be secured to the boat.

Applicant argues on page 13 that if the impermeable layer of the Hale reference was attached to the same surface as the permeable layer the device would not function for its intended purpose of compressing the layers of the composite as they cure. This argument is unclear because the impermeable layer (30) and the permeable layer (breather material 26) in Hale are attached to the same surface (see for example figure 8).

Applicant argues on page 13 that the Scola discloses a method of strengthening a composite which is different form the invention of claim 1 which is a method for treatment of a surface. Applicant's invention is a method and apparatus for treating water damage on a surface of a composite material by applying heat and vacuum to extract gas and vapor. Scola is directed to a method of applying a vacuum heat

treatment of water degraded composites. It is not clear what the difference between the invention and the reference Scola that Applicant is referring to.

Applicant argues that the Scola reference deals with the treatment of an entire article placed in a vacuum oven or other suitable container while the invention of claim 1 pertains to the treatment of a particular region of a glassfibre product. It is noted that claim 1 is not exclusively directed to the treatment of a particular region of a glassfibre product. Claim 1 recites that the gas permeable material is in contact with a partial region of a surface of the product, this does not exclusively pertain to the treatment of a particular region of a glassfibre product and does not exclude the method as described by Scola and Hale.

Applicant argues on page 13 that the Scola reference does not disclose the use of layers of permeable and impermeable material to apply conditions of temperature and vacuum to a partial region of the surface of the surface of a glassfibre product. As discussed above, the Scola reference discloses applying heat and vacuum, but does not disclose the particulars of the apparatus. The Hale reference was cited to show a well known apparatus to for applying heat and vacuum to a composite for extracting water vapors and gaseous volatile contaminants from composites with a gas permeable material and an impermeable material positioned as claimed, in particular for repair of such composites as well.

Applicant argues on page 13 that the Hale reference pertains to a method of forming a composite object rather than to the treatment of a damaged portion of a composite. It is noted that the claims are not limited to treatment of a damaged

"portion" of a composite as Applicant argues. Furthermore, Hale is cited to show the particulars of a well known apparatus for applying heat and vacuum to composites, it is noted, in particular for applying such an apparatus for the repair of composites on site such as with boats. It would have been well within the purview of one of ordinary skill in the art to provide a known apparatus for applying heat and vacuum to composites in order to extract contaminants from the composite such as the one disclosed in Hale.

Applicant argues on page 14 that the Hale and Scola references fail to disclose the treatment of a partial region of a product or to even suggest that such a treatment is possible. Claim 1 is not limited to the treatment of a partial region of a product. Even if claim 1 were limited to a treatment of only a partial region of a product, such would have been well within the purview of one of ordinary skill in the art treating a small damaged area of a large composite that can not fit within the vacuum and heat apparatus.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gladys J Piazza Corcoran whose telephone number is (703) 305-1271. The examiner can normally be reached on M-F 8am-5:30pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Gladys J Plazza Corcoran
Examiner
Art Unit 1733

GJPC
September 8, 2003